


**FOOT-AND-MOUTH DISEASE and
CLASSICAL SWINE FEVER
STANDARD OPERATING PROCEDURES:
9. BIOSECURITY**

FAD PReP
Foreign Animal Disease
Preparedness & Response Plan

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The Foreign Animal Disease Preparedness and Response Plan (FAD PReP) Standard Operating Procedures (SOPs) provide operational guidance for responding to an animal health emergency in the United States.

These draft SOPs are under ongoing review. This document was last updated in **November 2013**. Please send questions or comments to:

National Preparedness and Incident Coordination
Veterinary Services
Animal and Plant Health Inspection Service
U.S. Department of Agriculture
4700 River Road, Unit 41
Riverdale, Maryland 20737
Telephone: (301) 851-3595 Fax: (301) 734-7817
E-mail: FAD.PReP.Comments@aphis.usda.gov

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9.1 Introduction

Many animal diseases, such as classical swine fever (CSF) or foot-and-mouth disease (FMD), are readily spread through movement of infected livestock and fomites. Contact with animals and with their excrement poses significant risks, as clothes, boots, vehicles, and equipment can become contaminated and carry disease from one premises to another. Foreign animal diseases (FADs) can also be spread by wildlife and other vectors.

Proper biosecurity measures have two functions: (1) containing the virus on Infected Premises (IP) (biocontainment), and (2) preventing the introduction of the virus via movement of personnel and material to naïve animals and premises (bioexclusion). During an FAD outbreak, a careful balance must be maintained between facilitating response activities and ensuring personnel do not expose naïve animals and premises to disease.

Implementing biosecurity measures as standard practice helps ensure that those working or in contact with farm animals do not spread disease when they enter or leave a premises. This is important whether or not any disease outbreaks have been reported. FADs like FMD and CSF are highly contagious viral diseases that can affect both domestic and wild animals, so there are many public health reasons for practicing biosecurity.

This standard operating procedure (SOP) describes the biosecurity procedures needed to prevent the spread of an FAD after identifying the index case. Properly implemented, these measures help reduce the risk of pathogen transmission during the movement of personnel and material necessary for the extensive activities of a disease campaign, such as surveillance, vaccination, appraisal, depopulation, and disposal.

Several key APHIS documents complement this SOP and provide further detail when necessary. This SOP references the following APHIS documents:

- U.S. Department of Agriculture, Animal and Plant Health Inspection Service (APHIS), CSF Response Plan: The Red Book and FMD Response Plan: The Red Book
- Veterinary Services Guidance Document 12001
- FAD PReP NAHEMS Guidelines:
 - Cleaning and Disinfection
 - Disposal
 - Health and Safety
 - Mass Depopulation and Euthanasia
 - Wildlife Management and Vector Control
- FAD PReP SOPs
 - Cleaning and Disinfection
 - Disposal
 - Health and Safety and PPE.

These documents are available on the internal APHIS FAD PReP website for those who have access to the APHIS intranet at <http://inside.aphis.usda.gov/vs/em/fadprep.shtml>, and they are available to the public at http://www.aphis.usda.gov/animal_health/emergency_management/.

9.1.1 Goals

9.1.1.1 Preparedness Goals

- Develop incident, fixed, and mobile operation biosecurity plans before the incident or outbreak.
- Ensure personnel are trained in biosecurity measures. Develop and make available just-in-time training for additional personnel.

9.1.2 Response Goal

The response goal is to ensure that biosecurity procedures are implemented within 12–14 hours of identifying the index case.

9.1.3 Guidelines

Observe the following guidelines to ensure proper biosecurity measures:

- Establish biosecurity programs that are demonstrable and measurable, before an FAD incident or outbreak, including the ability to increase biosecurity as needed, in the event of a highly contagious FAD outbreak.
- Identify gaps or critical control points in biosecurity processes and functions, and provide correction before the incident or outbreak.
- During an FAD outbreak, biosecurity measures are intended to prevent the disease from spreading among susceptible animal species. The biosecurity program includes plans, controls, and actions focused on movements of animals, personnel, and conveyances, into and out of potentially infected areas, to avoid cross contamination. Implement rapid coordination and identification of the resources needed to implement biosecurity operations, including the necessary types and quantity of PPE and disinfectants.
- A biosecurity plan is implemented for all IP, Contact Premises (CP), Suspect Premises (SP), checkpoints, and livestock facilities. Each State sets up a notification process that informs owners of susceptible livestock of the current risk of disease spreading to their property.

9.1.4 Coordination

The biosecurity activities described in this SOP should be implemented in close coordination with health and safety activities and the Site Safety Officer (SSO). (See the FMD and CSF Health and Safety and PPE SOP).

9.2 Purpose

This SOP provides guidance on biosecurity principles, policies, and procedures for animal health emergency deployments to APHIS Veterinary Services and other official response personnel in

the event of an FAD outbreak. The procedures serve as guidance for Biosecurity Group Supervisors and associated personnel on biosecurity activities. However, deviations from these procedures may be permissible, if necessary, to address a given situation. In addition, details provided in various sections may need to be combined to meet the requirements of a particular situation.

The first section of the SOP serves as a basis for creating a comprehensive biosecurity plan and the second provides the operational SOP for the implementation of biosecurity measures outlined in the plan.

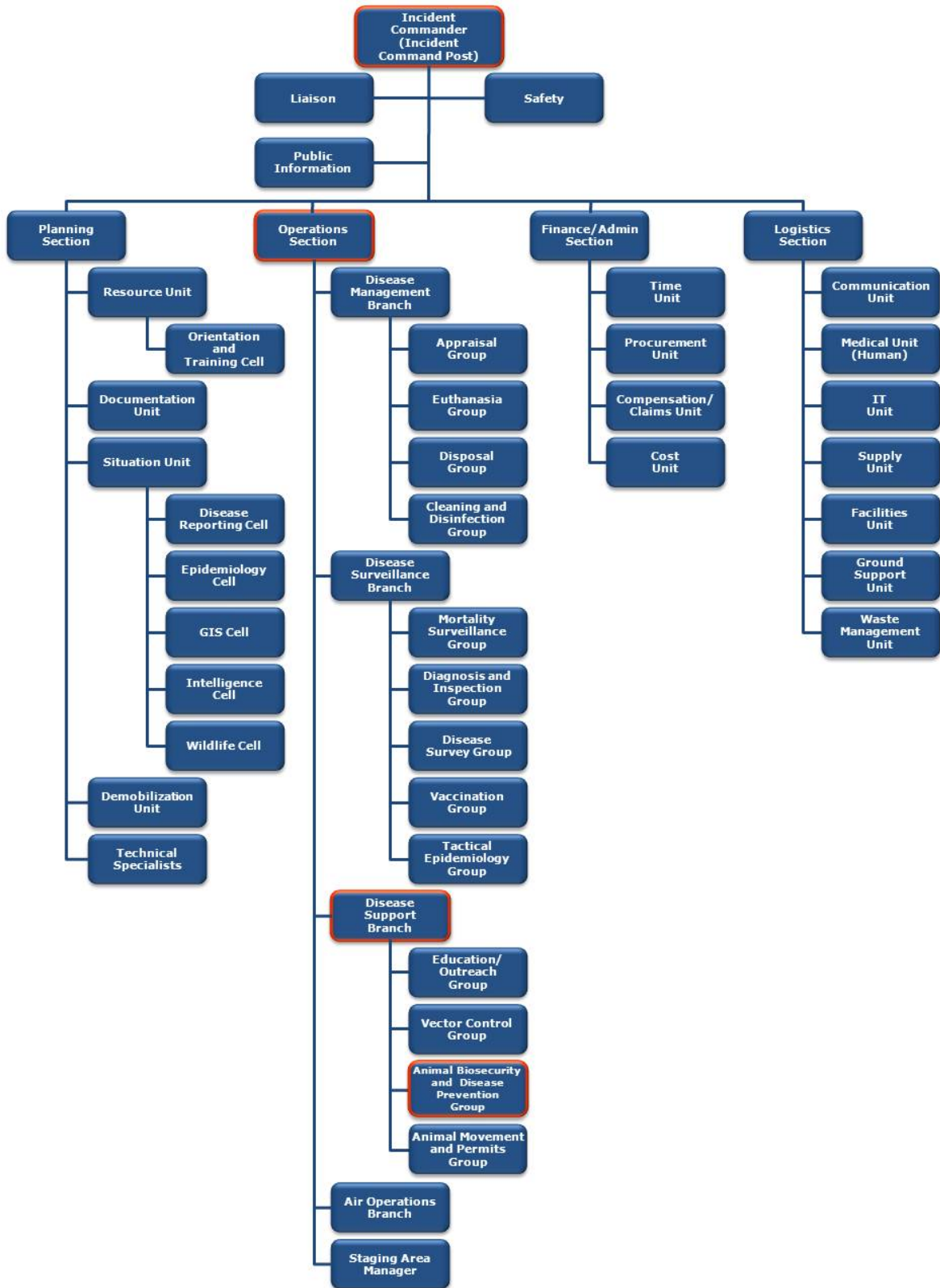
9.3 Responsibilities

The roles of biosecurity response personnel may vary depending on the incident and even during the same incident. The number of personnel and the command structure are dependent on the size, duration, and complexity of the incident. Large scale incidents may involve multiple premises and cover large areas. As the response progresses personnel requirements may change. All roles and responsibilities may be designated to available and qualified personnel as needed. The command structure and positions described below are provided as guidance.

9.3.1 Animal Biosecurity and Disease Prevention Group

Under the Incident Command System (ICS) structure the Animal Biosecurity and Disease Prevention Group is part of the Operations Section and falls under the operational control of the Disease Support Branch. See Figure 9-1 for an example of the ICS at the incident level.

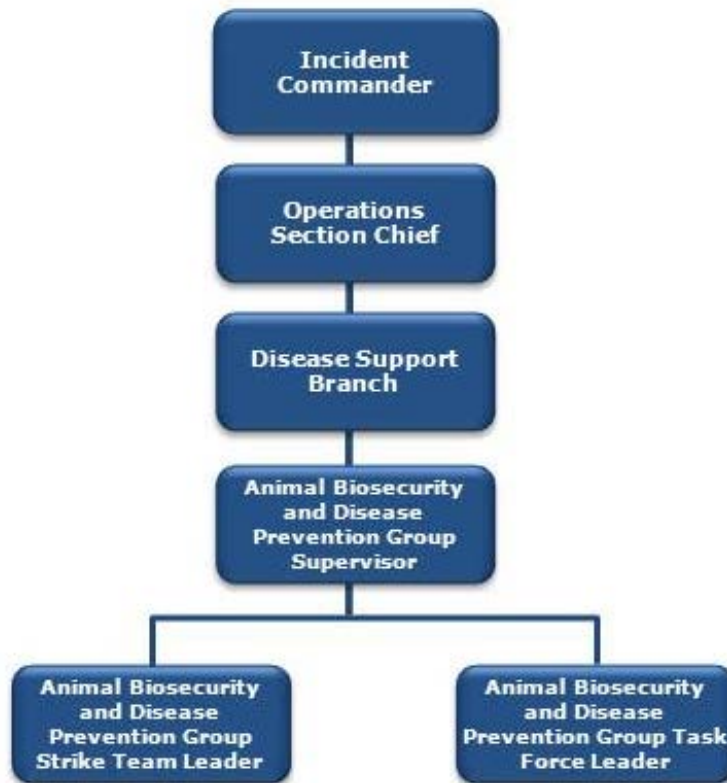
Figure 9-1. Example of ICS



Note: GIS = geographical information systems, IT = information technology.

The Biosecurity Group is led by the Biosecurity Group Supervisor, who reports to the Operations Branch Director. The Biosecurity Group Supervisor may deploy Strike Teams or Task Forces depending on the incident. A Strike Team contains similar resources and disease specific skills, while a Task Force contains various resources and no disease specific skills. Biosecurity Team Members work on IP or CP and provide front line assistance in containing and controlling the outbreak. See Figure 9-2 for the Biosecurity Group command structure.

Figure 9-2. Biosecurity and Disease Prevention Group Structure



9.3.1.1 Biosecurity Group Supervisor

The Biosecurity Group Supervisor is assigned to the Incident Command Post (ICP) and supervises all Biosecurity Teams (Strike Team or Task Force) and Biosecurity Team Members. Individuals selected as Biosecurity Group Supervisors are trained before an animal health emergency occurs.

The Biosecurity Group Supervisor does the following:

- Coordinates with the SSO and creates a site-specific biosecurity plan and submits it to the Incident Commander for approval.
- Consults with Biosecurity Team Leaders to assess the need for biosecurity personnel, vehicles, and equipment during a response.

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- Determines the number and type of personnel and resources needed to conduct biosecurity operations.
 - Communicates with the Operations Section Chief to ensure availability of resources and advises the Operations Section Chief of personnel requirements that cannot be satisfied locally so that arrangements for additional personnel can be made.
 - Verifies the credentials, training, and security clearances of all personnel assigned to the Biosecurity Group. Maintains documentation indicating that credentialing requirements have been met.
 - Works with appropriate officials to issue contracts and leases regarding equipment or personnel for the biosecurity operation.
 - Appoints Biosecurity Team Leaders and assigns personnel to Biosecurity Teams.
 - Identifies personnel training requirements and ensures that responders receive the appropriate orientation training upon arrival at the Incident Site.
 - Ensures all biosecurity personnel receive training on the routes of pathogen transmission and measures to reduce the risk of pathogen transmission.
 - Ensures that Biosecurity Team Leaders perform their tasks in accordance with established biosecurity policies and procedures.
 - Coordinates Biosecurity Group activities with the activities of Euthanasia, Appraisal, and Disposal Groups.
 - Establishes and maintains effective working relationships with industry groups and producers, including producer groups, processing plant leaders, renderers, feed-mill operators, transportation company representatives, and other stakeholders.
 - Prepares regular briefings and reports. Verifies the accuracy and completeness of all required reports and submit them promptly to the Operations Section Chief.
 - Informs the Operations Section Chief of any problems.
 - Serves as a resource for technical information about biosecurity methods and procedures and maintains files and resource materials on these topics.

9.3.1.2 Biosecurity Team Leader

The Biosecurity Team Leader supervises a Biosecurity Team assigned to a clearly defined area or a number of premises. Depending on the size of the response, there may be several Biosecurity Teams, each with its own Team Leader. Two types of teams may be deployed:

- *Biosecurity Strike Team.* Team with experience and technical knowledge in biosecurity and disease prevention techniques applicable to specific diseases. Team employs similar resources to perform biosecurity and disease prevention tasks on a specific premises or set of closely related premises.
- *Biosecurity Task Force.* Team with skills and experience necessary to perform biosecurity and disease prevention tasks on a large complex premises or a diverse group of premises. This team has a wide variety of resources and does not possess the technical

knowledge in biosecurity diseases and prevention techniques applicable to specific diseases.

Biosecurity Team Leaders (Strike Team or Task Force) report to the Biosecurity Group Supervisor.

The Biosecurity Team Leader does the following:

- Assists the Biosecurity Group Supervisor in creating a site-specific biosecurity plan.
- Helps determine the number and types of resources needed to effectively and efficiently perform biosecurity and disease prevention activities.
- Assigns and supervises Biosecurity Team Members.
- Establishes a communication system between Team Members and the Team Leader.
- Assists the Biosecurity Group Supervisor with training personnel.
- Assists Biosecurity Team Members with their specific duties and biosecurity policies and procedures.
- Ensures that all personnel follow biosecurity measures and biosecurity measures are implemented for all people, animals, vehicles, equipment, and other materials entering or leaving the Control Area (CA).
- Works with premises owners and managers to create detailed property maps that identify roads, neighboring premises, fences, gates, property access points and other relevant geographic information.
- Ensures control movements on and off premises. This may include
 - assigning Biosecurity Team Members to establish a premises security system or serve as guards at entrances;
 - preventing the entry of unauthorized people, animals, equipment or vehicles on to the premises;
 - assigning a biosecurity team to the decontamination post to monitor and control disinfection and decontamination of vehicles prior to exiting the premises;
 - arranging for patrols of boundary fences and repairing fences as necessary; and
 - providing daily briefings to security staff on activities and issues related to biosecurity.
- Encourages premises owners and managers to establish or upgrade premises biosecurity plans and assisting with the implementation of such plans.
- Ensures that Biosecurity Team members work with owners and managers of IP to increase biosecurity awareness and comply with established movement restrictions. In cases where residents leave their property, ensures that biosecurity and cleaning and disinfection (C&D) protocols are followed on the premises.

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- Ensures that the movement of animals and animal products arriving or leaving the affected premises is closely monitored to guarantee compliance with movement and permit restrictions. In consultation with the Biosecurity Group Supervisor, ensures compliance with the permit system to facilitate interstate and intrastate movement of animals and animal products.
 - Verifies that quarantine notices are posted at all premises entrances.
 - Establishes a system to identify, monitor, and control individuals entering premises and prevent the entry of unauthorized individuals. Ensures that Biosecurity Team Members maintain accurate logs of all personnel, equipment, and vehicles entering and leaving each IP and CP.
 - Reports all possible biosecurity breaches to the Biosecurity Group Supervisor and immediately notifies the Biosecurity Group Supervisor of any issues or problems.
 - Provides information and advice to owners and the appropriate officials in order to secure support and acceptance of biosecurity procedures.
 - Stays current on information related to disease prevention principles and practices.
 - Prepares briefings and reports for the Biosecurity Group Supervisor.

9.3.1.3 Biosecurity Team Members

Biosecurity Team Members are assigned to work on Infected or Contact Premises and provide front-line assistance in containing a disease outbreak. Biosecurity Team Members may be assigned to premises by either the Biosecurity Team Supervisor or the Biosecurity Group Supervisor. Biosecurity Team Members usually work individually on assigned premises with the owner, the owner's family, employees, and visitors.

After arriving on the premises, the Biosecurity Team Members assist the Biosecurity Team Leader. Team members do the following:

- Brief the owner, the owner's family and premises' employees about hazards associated with the emergency.
- Encourage the owner to establish or upgrade an ongoing premises biosecurity plan. The plan should include the following elements: C&D; movement controls for people, including residents, employees and visitors, animals, vehicles and equipment; isolation of new, returning or ill animals; assessment of the risks posed by visitors; and plans for dealing with visitor risk during the outbreak.
- Increase biosecurity awareness and ensure compliance with established movement restrictions. In cases where residents leave their property, ensure that Biosecurity and C&D protocols are followed.
- Coordinate activities with teams from other Groups (for example, Euthanasia or Disposal) that may visit the premises.
- Monitor the disposal, laundering, and cleaning of contaminated materials (for example, disposable or reusable uniforms, coveralls, shovels, and boots).

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- Monitor the inventory of biosecurity-related supplies on hand (for example, disinfectants, uniforms, footwear, and sprayers) and notify the Biosecurity Team Leader of any supply needs.

9.3.2 Logistics Staff Responsibilities

Logistics personnel must

- maintain footbaths. (See [Attachment 9.A](#) Protocol for Maintaining Footbaths);
- monitor disposal, laundering, and cleaning of contaminated materials (for example, disposable uniforms, cloth overalls, shovels, and boots);
- mix and provide disinfectants for handheld sprayers;
- monitor supply inventory related to biosecurity (for example, disinfectants, uniforms, footwear, and sprayers); and
- coordinate with operations staff to ensure that supplies are adequate for field personnel.

9.3.3 Local Government Employees

The following guidance is for local government employees (such as code enforcement, environmental health, and building inspection employees) in the quarantine zone.

When possible, suspend activities within neighborhoods with active disease. Contact the state liaison officer to receive periodic updates regarding activities. When local government employees visit neighborhoods with active disease cannot be avoided, those employees take the following biosecurity measures:

- Use disposable footwear that can be disposed upon leaving the property. Alternatively, they may use footwear that can be disinfected.
- Wash or disinfect hands before entering and upon leaving homes (dry hand sanitizers may be used).
- Follow biosecurity protocol as outlined above, including not handling animals, avoiding walking within the areas where animals are caged or fenced, and avoiding visiting other properties after visiting an IP.
- Contact the Response or State Liaison Officer upon observing sick animals.
- Take extra care to clean or disinfect hands and footwear upon exiting the property.
- Launder clothing as soon as possible.
- Shower.

9.3.4 Public Utility Employees

Public utility employees do the following:

1. If there are no infected animals conduct business as usual; there are no special requirements.

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2. If infected animals are present or if there is a quarantine sign present:
 - a. Avoid these areas if possible, or follow step 2c.
 - b. Avoid driving onto these premises.
 - c. Exercise minimal precautions if entering these premises:
 - i. Avoid areas where the infected animals are located.
 - ii. Wash hands, boots, and equipment before leaving these premises, when it is necessary to work in areas where the infected animals are located.
 3. IP (past 30 days):
 - a. The ICP informs the public utility companies of the location of the IP over the past 30 days and of any IP in the future.
 - b. Avoid these premises, if possible.
 - c. Avoid driving onto these premises.
 - d. If entering these premises,
 - i. avoid areas where the animals are located,
 - ii. wash hands with antimicrobial soap prior to entering IP, and
 - iii. wear boot covers (or rubber boots) and gloves when minimal contact with the environment is expected. Also wear disposable (or clean) coveralls, hair net, and mask if the work being done is expected to cause clothing to become contaminated.
 - e. When exiting the IP:
 - i. Clean and disinfect all equipment used before leaving premises.
 - ii. Dispose of all outer disposable clothing and footwear at the premises. Otherwise, place disposable clothing inside two sealed plastic garbage bags for later removal.
 - iii. Disinfect footwear and tires.
 - iv. Wash hands with antimicrobial soap when leaving the IP.
 - v. When possible, do not visit other properties that day.
 - vi. Launder clothing as soon as possible.
 - vii. Shower.

9.4 Procedures

9.4.1 Planning—Site-Specific Biosecurity Plan

Planning is essential to ensure that biosecurity is maintained. The Biosecurity Group Supervisor prepares a site-specific biosecurity plan in consultation with the SSO. The IC approves the plan prior to implementation.

This section provides an overview of topics that should be considered when preparing the site-specific biosecurity plan. Subsection 9.4.2 covers the procedures necessary to implement the plan.

9.4.1.1 Outline

The Biosecurity Group Supervisor develops a written plan detailing biosecurity activities. The plan includes the following sections:

1. Biosecurity risk assessment
2. Biosecurity implementation
 - a. Mobile
 - b. Fixed
 - c. Biosecurity Control Zones
 - d. On-premises movement
 - e. Disinfectant selection and use
 - f. Shipping and transportation
3. Personnel
 - a. Roles and responsibilities
 - b. Credentials, training, and security clearance
4. Materials, supplies, and equipment
5. Regulatory permits and approvals
6. Quality assurance/quality control
7. Briefings
8. Documentation and reporting
9. Demobilization.

9.4.1.2 Considerations

A good biosecurity plan is important for eradicating and controlling an FAD and for the routine maintenance of animal health. Biosecurity minimizes disease spread via people, animals, vehicles, and equipment from premises to premises during disease control and eradication efforts.

A biosecurity plan describes how to plan for unavoidable breaks in biosecurity to protect life or property such as ambulance or fire truck entry. A basic biosecurity plan for attaining these goals—both in an emergency situation and in routine practice—consists of four essential elements:

1. Biosecurity awareness for all response personnel. Fatigue, stress, distraction, and lack of forethought all can cause even the most conscientious individual to forget the crucial

importance of biosecurity measures. Thus, it is essential that all personnel exercise the utmost thought, patience, persistence, and care in creating and carrying out a biosecurity plan—both under normal circumstances and during a disease outbreak. The measures outlined in the biosecurity plan must be communicated to all response personnel.

2. Design and implement C&D procedures to reduce or eliminate pathogens and pathogen transmission. (See the C&D SOP).
3. Control of the movement of people and animals by ensuring personnel are not travelling between IP and unknown or non-infected premises. During an FMD or CSF outbreak, it is important that personnel wait the allotted time between premises visits. Typical waiting periods vary between 24 and 72 hours. Actual waiting periods are recommended by the IC on the basis of the outbreak circumstances and need for personnel. Team members should not travel from IP or SP to unknown or non-infected premises. However, they may travel between IP, if proper mitigating procedures are followed.
4. Maintain a closed herd to the fullest extent possible. Herds that are “closed” to the introduction of new animals (with population increase occurring only from herd offspring) decrease the potential for transmission of disease agents from “outside” animals. If a closed herd is not possible, purchase animals only from the healthiest possible sources and isolate newly purchased animals and other returning animals from existing herds for a suitable period, which is typically 30 days or more. Do not introduce vaccinated animals to naïve herds.

9.4.1.3 Biosecurity Risk Assessment

The biosecurity risk assessment is location and task specific and based on the potential or actual risks and hazards that may be encountered in a specific situation. A good biosecurity plan requires a thorough risk assessment so that biosecurity measures can be developed to mitigate known and unknown risks. The risk assessment must be completed prior to developing the following sections of the site-specific biosecurity plan.

9.4.1.4 Biosecurity Implementation

9.4.1.4.1 *Mobile Biosecurity Protocol*

This section addresses mobile activities such as surveillance, where response personnel travel from one premises to another in the course of a workday. The protocols should address biosecurity procedures between premises.

9.4.1.4.2 *Fixed Biosecurity Protocol*

This section addresses biosecurity requirements related to a fixed site that is visited by multiple personnel over multiple days. For example, these protocols should address biosecurity at an IP where depopulation, disposal, and decontamination are taking place.

9.4.1.4.3 *On Premises Movements*

This section addresses movements from one part of an IP to another part of the IP. For example, if a single premises has multiple barns and residential buildings, this section should address how to handle biosecurity when moving from one building to another.

9.4.1.4.4 *Disinfectant Selection and Use*

This section addresses the disinfectants that are used to eradicate FAD agents on specific surfaces. It should also address how to mix and apply the selected disinfectants. Reference to the site-specific C&D plan may be appropriate. Coordination with the C&D Group is necessary. (See the C&D SOP).

9.4.1.4.5 *Shipping and Transportation*

This section addresses how biosecurity-related disposable materials, supplies, and equipment that have become contaminated are packaged for shipment or transport for disposal. This is particularly relevant to mobile biosecurity operations involving disposable PPE. (See the Disposal SOPs).

9.4.1.5 Personnel

This section identifies all Biosecurity Group members and the specific tasks for which each is responsible. Refer to Section 9.3 on personnel responsibilities for additional information.

The Biosecurity Group Supervisor verifies credentials, training, and security clearances for Group members. If necessary, the Biosecurity Group Supervisor makes arrangements to provide personnel with just-in-time training. No personnel are allowed to enter a premises without verified credentials. The Biosecurity Group Supervisor maintains documentation that the requirements have been met for each member of the team at the site during the response. If documentation is not available, personnel must obtain the training and associated documentation prior to participating in biosecurity activities. Some examples of required credentials include the following:

- Pesticide applicator license (if applicable)
- Hazardous waste operations and emergency response certification
- Respirator fit test
- Medical fitness for duty.

The Biosecurity Group Supervisor identifies specific briefings required prior to beginning biosecurity activities, including biosecurity requirements, site conditions, and specific tasks. Included in the briefings is the frequency of the briefings and coordination with other plans that involve briefings, such as the site-specific health and safety, depopulation, disposal, and C&D.

9.4.1.6 Materials, Supplies, and Equipment

This section specifies the materials, supplies, and equipment necessary to perform the biosecurity activities recommended in the plan. The following equipment and supplies are generally needed for biosecurity:

- Equipment
 - PPE (as specified in the site-specific health and safety plan, see the Health and Safety and PPE SOPs)

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- 2 Tyvek or similar suits
 - Disposable boots
 - Disposable gloves
 - Respiratory protection.
 - Materials and supplies
 - Bucket and brush for cleaning boots and equipment
 - Broad-spectrum surface disinfectant
 - Fingernail brush
 - Hand sanitizer
 - Garbage bags
 - Resealable bags (zip-lock).
 - Water supply if water is unavailable or possibly contaminated.

9.4.1.7 Regulatory Permits and Approvals

This section identifies any regulatory permits or other approvals related to biosecurity activities. For example, this section should address the need for the following:

- Approval to visit a SP in a Surveillance Zone.
- Discharge permits required for releasing disinfectant solution to the environment.

9.4.1.8 Quality Assurance/Quality Control

This section addresses inspections and spot checks that the Biosecurity Group Supervisor or designee perform to ensure strict adherence to all biosecurity measures. Each inspection and spot check is documented. Documentation includes the following:

- Time
- Place
- Activity observed
- Outcome of observations.

9.4.2 Operations

9.4.2.1 Briefings

The Biosecurity Group Supervisor briefs Biosecurity Group members on all aspects of the biosecurity effort, including their duties, policies, and procedures such as biosecurity protocols before entering the Exclusion Zone (EZ). The Biosecurity Group Supervisor also regularly prepares briefings and reports for the Operations Section Chief and notifies this person immediately of any problems.

Other briefings include:

- The SSO briefs all responders on safety precautions for each operation in accordance with the site-specific health and safety plan. (See the Health and Safety and PPE SOPs).
- Orientation Training Cell personnel brief C&D Group members on the nature of the disease and any other circumstances that might affect the response.

9.4.2.2 Site Security and Safety

9.4.2.2.1 General

Signs are placed in the appropriate areas in the site to indicate instructions or precautions that site personnel and visitors must follow when entering the site. Refer to [Attachment 9.B](#) for sample signs to use during a FAD response.

All personnel entering the site must

- meet security requirements as established by the IC;
- present documentation of verified credentials showing they are qualified to perform their assigned tasks;
- present documentation that they have received all required briefings as defined in the site-specific biosecurity plan; and
- wear the required PPE specified in the site specific health and safety plan. (See the Health and Safety and PPE SOPs).

Each day prior to entering a potentially infected site for the first time, personnel perform the following tasks:

- Don PPE as specified in the Health and Safety and PPE SOPs and use only clean equipment and supplies.
- Verify that Control Zones are properly delineated.
- Do not attempt to disinfect a surface without thoroughly cleaning it first.

9.4.2.2.2 Visitor Risk Mitigation

In the event of an FAD outbreak, the risk posed by visitors increases, especially if the premises are in or near the quarantine area. The Biosecurity Group Supervisor consults with the Diagnosis and Inspection Group to establish policies for identifying and controlling access to quarantined areas and premises.

As a general rule, the closer a premises is to the IP, the greater the risk for disease transmission and need for strict biosecurity and C&D procedures.

In an outbreak, consider all visitors as high-risk visitors, especially if the premises are located in a quarantined area. High-risk visitor procedures are shown below (Steps 1–15). Steps 1–4 cover minimum biosecurity measures necessary for a low-risk visitor. Steps 1–7 cover the biosecurity

measures necessary for medium-risk visitors. During an outbreak, all visitors should follow steps 1–15 to ensure maximum biosecurity.

9.4.2.2.2.1 Visitor Biosecurity in a Quarantined Area

If premises are located within the animal health emergency quarantine area, all visitors are considered “high-risk.” Keep premises visits to a minimum. Please refer to NAHEMS Guidelines: Biosecurity for further details on visitor-risk levels.

The Biosecurity Group Supervisor, Team Leader, and Team Members work with any visitors allowed on the premises to ensure that highly rigorous biosecurity and C&D measures are observed. These procedures include the following:

1. Identify and maintain a “clean” area in the vehicle (usually the passenger area or compartment). Keep the “clean” area separate from a “dirty” area (usually the cargo area of a truck, the trunk of a car, or the back of a station wagon) of the vehicle. Upon entering the premises, a visitor is considered “dirty” and should not go into the “clean” area of the vehicle (for example, to replace equipment or supplies) unless he or she has disposed of or cleaned and disinfected exposed clothes, footwear, hats, gloves, equipment, supplies, and any other potential sources of pathogen transmission.
2. After the visitor exits the vehicle, biosecurity personnel immediately consult with him or her to designate an arbitrary line demarcating a “clean” side (on the vehicular side of the line) and a “dirty” side (on the premises side of the line). Once the visitor has crossed the line and into the “dirty” side, he or she does not return to the “clean” side unless exposed clothing, footwear, hats, gloves, equipment, supplies, and any other potential sources of pathogen transmission have been disposed or cleaned and disinfected.
3. Visiting personnel bring the necessary clothing, equipment, and supplies for visits and arrange to have a sufficient supply of water for cleaning available near the vehicle parking area.
4. Before leaving for a premises visit, personnel place the clean clothing, equipment, and supplies in the designated “clean” area of the vehicle.
5. Only vehicles that are clean and free of dirt, debris, and organic material are allowed on the premises.
6. Vehicle interiors must be clean and equipped with easily removable rubber floor mats. Vehicle exteriors and trailers—including tires, wheel wells and undercarriage—are cleaned and disinfected prior to arrival on the premises.
7. Park vehicles on graveled, paved, or concrete areas a minimum of 500 feet from the animal production area to minimize contact with soil, mud, or manure. Keep vehicle windows closed.
8. Check the drainage of the premises to ensure that used disinfectant and water used for C&D do not flow off the premises or into water sources such as lakes, creeks, or rivers.
9. Immediately upon exiting the vehicle at each premises, put on clean disposable or reusable outerwear (for example, coveralls, coats, and jackets) and clean disposable or rubber boots.

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10. Clean and disinfect the interior and exterior (including tires, wheel wells, and undercarriages) of all vehicles and trailers immediately prior to arrival and after departure. At a minimum, vehicle and trailer exteriors (including tires, wheel wells, and undercarriages) are cleaned with soapy water immediately prior to arrival and immediately after departure and the vehicle and trailer should be taken through a pressure car wash.
 11. All visitors entering the premises must wear clean disposable or reusable protective clothing (for example, coveralls, hats, gloves, and boots) and clean disposable or reusable footwear. Soiled footwear needs to be cleaned and disinfected. See the C&D SOP before entry onto the premises.
 12. Visitors must wash their hands with soap and water before entering and after leaving the premises to avoid transmitting disease agents from person to person or to animals.
 13. Clean and disinfect all equipment after each use.
 14. Clean, disposable plastic sleeves or gloves must be worn whenever direct contact with animals' bodily fluids, tissues, or excrement occurs (for example, births, inseminations, postmortems, or butchering). Ensure that instruments and equipment such as dehorner, castrators, and syringes are sterile before use. Disposable needles and syringes should be used whenever possible and left at the site.
 15. Visitors should follow exit procedures outlined in this SOP.

9.4.2.3 Biosecurity Implementation

9.4.2.3.1 *General Biosecurity Protocol*

Government personnel with oversight responsibility, as well as other individuals, visit multiple premises routinely and can inadvertently come into contact with viruses and bacteria on these properties. Without the proper precautions, personnel can spread microorganisms to other premises. Therefore, field personnel should make extraordinary efforts to prevent the spread of FADs to other facilities or animals. During a known emergency animal disease outbreak, animal health officials may specify additional precautions that must be followed. See [Attachment 9.C Protocol for On-Site Commercial Biosecurity Visits](#) for additional information.

All response personnel must take the following minimum biosecurity measures:

1. Wear rubber boots (or other footwear that can be cleaned and disinfected) or disposable plastic boots. Clean street shoes or boots are acceptable when visiting low-risk areas such as offices or homes away from animal areas. It may be possible to store footwear at facilities that would only be worn there. Some animal owners provide rubber boots or disposable plastic boots for visitors.
2. Prior to entering or leaving an animal facility, remove all dirt and organic matter from boots and thoroughly disinfect them using a bucket, brush, and an appropriate broad-spectrum disinfectant. Animal facilities include backyard facilities.
3. Wear disposable or clean coveralls, laboratory coats, smocks, or other suitable outerwear when coming into contact with animals, manure, or animal secretions. When visiting multiple facilities, personnel must have an ample supply of disposable or clean coveralls

so a fresh pair can be used at each site. Remove outwear when leaving a premises. Place dirty materials in a double plastic bag and seal it.

4. Thoroughly wash hands with antimicrobial soap prior to entering and when leaving a premises. The proper hand washing technique is to
 - a. remove all watches, jewelry, and other items prior to washing;
 - b. lather soap in hands vigorously for 15–20 seconds; and
 - c. rinse under a stream of warm water.
5. Avoid driving through manure and wastewater. Park the response vehicle away from pens, pastures, or areas where animals are held. Park on concrete or paved areas when available.
6. Do not enter animal production areas unless authorized and accompanied by a facility employee.
7. Clean the response vehicle between visits to animal facilities, including tires and floor mats (carpets should be covered with plastic floor mats). A commercial car wash is adequate. Spraying tires may be necessary in some situations.
8. Dispose of used disposable boots, gloves, and coveralls at the facility if possible. Otherwise, place them in a double plastic garbage bag and seal them for later disposal in the designated trash container at the facility designated area for contaminated items.
9. Keep all equipment used in the field clean. Disinfect any equipment that comes into contact with animals or their secretions before taking it to another property, or use disposable equipment. When visiting farms, select equipment that is easily disinfected (for example, plastic clipboards are easier to disinfect than wooden ones because organic material is easier to see on them).
10. Keep clean and dirty clothing, equipment, and supplies separate. Designate “clean” and “dirty” storage areas in vehicles.
11. Personnel that come in contact with a sick or dying animal should be considered “carriers” of the FAD and should follow proper disinfection procedures prior to coming into contact with other animals.

9.4.2.3.2 Surveillance Biosecurity Protocol

The following protocol applies to surveillance or similar operations where responders travel to multiple potentially infected sites during the course of a workday. Please see [Attachment 9.D](#) for additional information.

1. Upon reaching the premises, park the vehicle in a location off the road near where the containers are placed at each designated premises location.
2. Team members suit up following the biosecurity procedures below:
 - a. Before leaving the vehicle, place two pairs of Tyvek or similar boots over shoes. The team members can then exit the vehicle.

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- b. Put on Tyvek or similar suit, gloves, dust mask, and hair bonnet. Pull the second pair of gloves over the sleeves of the Tyvek or similar suit so that the skin on the arms is not exposed.
 3. One team member remains by the vehicle and is considered the “clean team member.” This person handles all clean equipment and forms. The team member entering the premises is considered potentially exposed or contaminated and considered the “dirty team member.” The clean team member hands equipment from the vehicle as needed to the dirty team member. The dirty team member remains dirty for the entire day; there is no switching back and forth of clean and dirty duties during a day.
 4. The dirty team member retrieves the sample bags containing the specimens to be sampled from the container at each site.
 5. After retrieving the sample bags, the dirty team member returns to the vehicle, where the clean team member provides a second trash bag into which the dirty team member places each sample bag for transport. The dirty team member sprays the outside of each bag with disinfectant before placing it inside the other one.
 6. The dirty team member
 - a. places the double-bagged sample into a third bag, which is the shipping bag;
 - b. places a yellow tag with a premises label on it on the outside bag; and
 - c. writes the date sampled and house identification (ID) on the label.
 7. The dirty team member closes the shipping bag, sprays and sponges it off with disinfectant, and places it in the back of the vehicle, in a cooler with ice packs or ice.
 8. The dirty team member sprays the inside and outside of the trash cans with disinfectant, then turns the cans upside down to signal to the owner that the collection has been completed. The lids are also sprayed on both sides and placed by the cans.
 9. The dirty team member sprays the vehicle wheels and wells with disinfectant.
 10. Both team members remove their bonnets, Tyvek or similar suits, and outer elastic banded boots in exactly that order, and place them in a trash bag. They place the bag in a second trash bag. The second bag is wiped down or sprayed with disinfectant and placed in a third bag. They leave their inner plastic boots and gloves on.
 11. The dirty team member sprays the sprayer with disinfectant and places the sprayer in the back of the vehicle.
 12. Both team members sit in the seat of the vehicle with feet outside and remove their gloves and plastic boots by rolling them inside out. They place gloves inside boots, ball up the boots and gloves, and place both balls into a trash bag.
 13. Both team members spray their shoes with disinfectant and wash hands with waterless cleaner before placing their feet inside the vehicle.
 14. Both team members return to the designated area for dropping off sample bags and do the following:
 - a. Put on one pair of booties and gloves before bringing the samples inside.

- b. Place the samples into the mortality surveillance cooler.
- c. Leave completed lab submission forms in the pocket on the exterior of the cooler.
- d. Return to the vehicle, remove boots and gloves, place them in a trash bag, spray bag with disinfectant, spray shoes with disinfectant, and wash hands with waterless cleaner.
- e. Discard all trash in the designated trash container.

15. They wash the vehicle at a car wash with undercarriage spray system.

9.4.2.3.3 Control of Work Zones Biosecurity Protocol

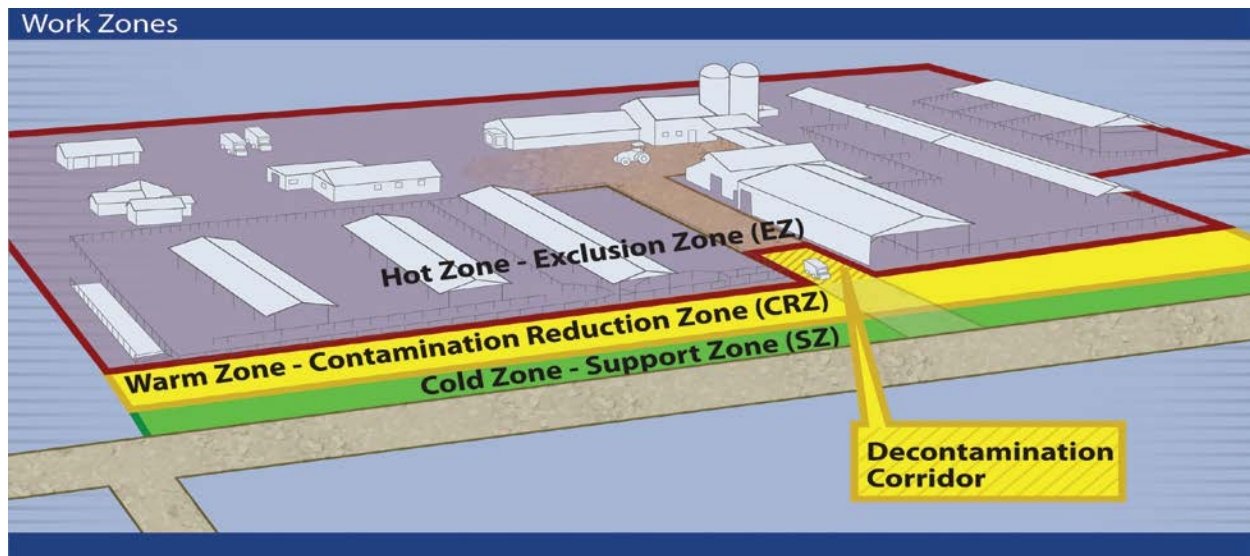
This protocol applies to depopulation, disposal, and decontamination activities where response operations may occur in a single location over multiple days. Biosecurity Control Zones are established to prevent spread of contamination away from the IP. All work zones are adequately marked using signs, fencing, traffic cones, and caution tape.

There are three types of Biosecurity Control Zones:

1. Exclusion Zone (EZ)—Hot Zone
2. Contamination Reduction Zone (CRZ)—Warm Zone
3. Support Zone (SZ)—Cold Zone.

The zones are shown in Figure 9-3 and described below.

Figure 9-3. Work Zones and Decontamination Corridor



Source: Dani Ausen, Andrew Kingsbury, Iowa State University

9.4.2.3.3.1 Support Zone Description

The SZ is the “cleanest” of the three zones and poses the lowest relative risk of exposure to pathogens and other hazards such as decontamination chemicals. In this zone

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- personnel are not required to wear PPE or handle contaminated articles or equipment, nor are they required to conduct decontamination;
 - medical support is provided to personnel in this zone, and facilities are provided for personal needs such as eating, drinking, or bathroom use;
 - equipment resupply and assembly take place;
 - donning of PPE occurs and accommodations for dressing are provided;
 - management of all activities occurs, directing personnel and depopulation, decontamination, and disposal activities;
 - the area is staffed by at least one person;
 - workers are not exposed to hazardous conditions;
 - administrative, clerical, and other support functions are based here;
 - air and surface monitoring are conducted as needed to ensure that it remains uncontaminated. If contamination is detected, zone boundaries are adjusted until corrective action is taken and monitoring results indicate that this zone is again uncontaminated;
 - access to the EZ and CRZ are strictly limited to individuals who meet all medical monitoring, training, and PPE requirements; and
 - visitors must receive appropriate training, be medically qualified, wear the appropriate level of protection, receive a safety briefing, and be escorted by qualified personnel. Visitors who do not meet the specified requirements must remain in the SZ.

9.4.2.3.3.2 Contamination Reduction Zone Description

The CRZ is the high-risk area where

- personnel complete the final decontamination of equipment and personnel, perform final washing and rinsing, and apply disinfectant;
- final doffing of personal protective equipment is completed with accommodations for dressing if necessary;
- there is a strict adherence to restrictions on movement of contaminated personnel and materials;
- at least one person remains in the CRZ to assist in the decontamination of those exiting the EZ;
- potential exposure to disease pathogens as well as chemical exposure to disinfectants is likely;
- all personnel are required to wear full PPE;
- decontamination of PPE takes place;

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- based on monitoring results, the CRZ boundaries may be adjusted to ensure that the SZ remains uncontaminated;
 - workers and equipment exit the EZ through the designated access point(s) into the CRZ;
 - workers and equipment are decontaminated in the CRZ, according to the procedures specified in the decontamination section of the site-specific biosecurity plan;
 - workers and equipment exit the CRZ into the SZ through the designated access points, shown in Figure 9-3;
 - if necessary, emergency decontamination procedures are implemented;
 - a decontamination corridor is established between the EZ and the CRZ where decontamination of personnel and equipment takes place; and
 - response teams enter and exit the EZ through the access control points that are located at each end of the decontamination corridor.

9.4.2.3.3.3 Exclusion Zone Description

The EZ is the potentially infected or contaminated area, likely an area of a farm, local market, or roadside stand where infected animals have been stored and sold. This zone is where

- depopulation, disposal, and decontamination of the site and equipment are performed. See the Depopulation, Disposal, and C&D SOPs;
- decontamination of equipment and personnel including boot and glove, and wash and gross material decontamination, is conducted;
- for disposal activities, waste collection containers are decontaminated before transport off-site;
- there is a high risk of exposure to pathogens or chemicals;
- the adherence to PPE requirements can create risk of heat stress due to the non-breathability of the PPE and the high level of physical activity;
- workers need to be monitored and rotated out with some frequency. The site leader determines the frequency of rotation based on local conditions;
- staffing consists of at least a two-person team while activities are being undertaken;
- personnel and equipment enter and exit via the designated access points in the CRZ, shown in Figure 9-3;
- personnel adhere to established work procedures;
- a “hotline” where personnel routinely enter or exit is located upwind from the EZ, whenever possible;
- no person may exit or be removed until they have been properly decontaminated or it has been confirmed to be safe to remove them without first being decontaminated;

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- no person may enter the EZ without the proper level of PPE as described in the site-specific health and safety plan;
 - no person may enter the EZ prior to the establishment of a decontamination area; and
 - once entry has been made into the EZ, anyone who remains in the CRZ must be decontaminated or checked for contamination before they can exit into the SZ.

9.4.2.3.3.4 Establishing Control Zones

When establishing Biosecurity Control Zones, do the following:

1. Demarcate the outer edge SZ with green tape. This provides a visual barrier for entry into the site. Only personnel who are a part of the operation may go beyond the green tape. All others must stay out of this area.
2. Demarcate the inner edge of the SZ with yellow tape. Beyond the yellow tape is the CRZ.
3. Place all tools, equipment, and water that will be used in the SZ between the green and yellow tape.
4. The CRZ worker and two exclusion workers don PPE in accordance with the site-specific health and safety plan.
5. The SZ worker remains in the SZ and does not need to don PPE.
6. Before entering the CRZ, the CRZ worker verifies that the exclusion workers are in full PPE compliance.
7. Exclusion workers establish the EZ by placing the red tape appropriately.
8. The CRZ worker places a tarp on the ground to establish the corridor for entering and exiting the CRZ from the SZ.
9. All required equipment is now transferred from the SZ to the CRZ. This includes all equipment required for cleaning, disinfection, depopulation, and preparation for disposal.
10. Two exclusion workers enter the EZ with all equipment required for depopulation, disposal, and decontamination.

9.4.2.4 Disinfectant Selection and Use

See the C&D SOP for disinfectant selection and use protocols.

9.4.2.5 Decontamination Procedures

The prevention of contamination is one of the most important aspects of decontamination. Good biosecurity measures would include contamination prevention activities as well as proper establishment of decontamination areas. Contamination prevention measures as well as general procedures for establishing decontamination areas and general decontamination practices are addressed below. See the C&D SOP for further details.

9.4.2.5.1 Contamination Prevention

One of the most important aspects of decontamination is the prevention of contamination. Good contamination prevention should minimize worker exposure and help ensure valid sample results by preventing cross-contamination. Procedures for contamination avoidance include the following:

- Do not walk through areas of obvious or known contamination.
- Do not handle or touch contaminated materials directly.
- Make sure all PPE has no cuts or tears prior to donning.
- Fasten all closures on suits, covering with tape, if necessary.
- Particular care should be taken to protect any skin injuries.
- Stay upwind of airborne contaminants.
- Do not carry cigarettes, gum, food, or drink into contaminated areas.

Precautions to minimize contaminating equipment are similar to those for personnel. They include the following:

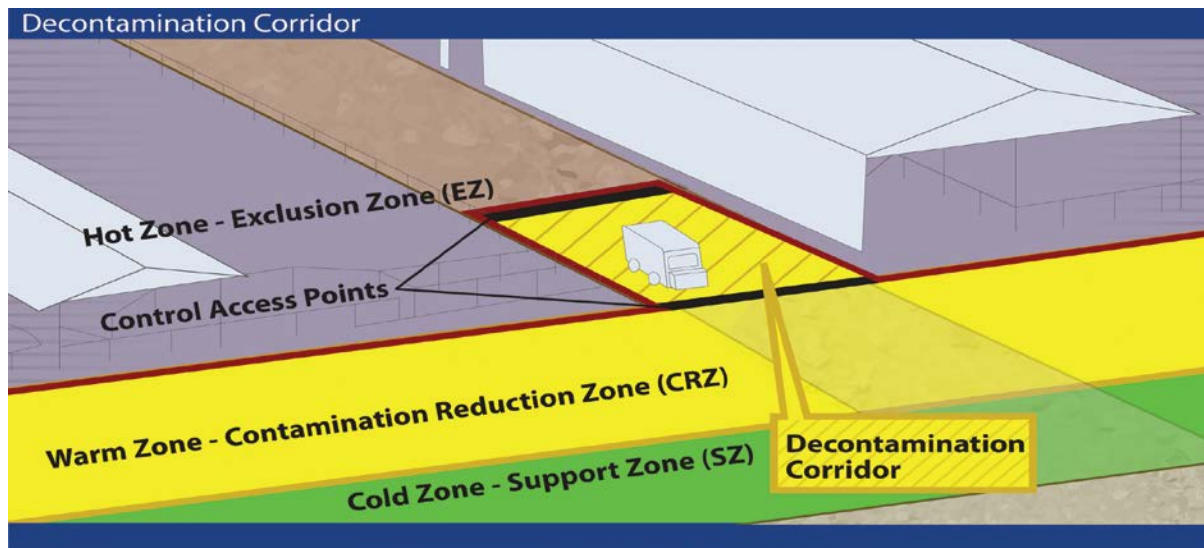
- Take care to limit the amount of contamination that comes into contact with heavy equipment and vehicles.
- If contaminated tools are to be placed on non-contaminated equipment or vehicles for transport to the decontamination pad, use plastic to keep the equipment or vehicles clean.
- If samples must be taken from a site, bag the sample containers before removing them from the site.

9.4.2.5.2 Establishing Decontamination Area

A decontamination area must be set up before any personnel or equipment may enter areas that pose the potential for exposure to hazardous substances. Decontamination area guidelines include the following:

- Establish the decontamination area within the CRZ perimeter, adjacent to the entrance or exit and a safe distance from the contamination source.
- Personnel, equipment, and apparatus may not leave the EZ without approval from the CRZ workers.
- The decontamination area should provide a decontamination corridor leading away from the source of contamination (EZ) toward the exit (SZ). Decontamination of personnel and equipment occurs along the corridor with stations along the way for depositing tools, equipment, protective clothing, and other items. See Figure 9-4 for a depiction of the corridor's location.

Figure 9-4. Decontamination Corridor



Source: Dani Ausen, Andrew Kingsbury, Iowa State University.

- Monitoring personnel and equipment should be appropriately placed along the path. A person traveling along the path should experience a decreasing level of contamination along the way.
- When showers or spray nozzles are used, adequate space must be provided to avoid contamination of other areas or persons.
- All contaminated items must remain within the perimeter of the EZ until they are decontaminated or safely packaged for removal.

During the decontamination process, all personnel working in the decontamination area must be adequately protected from contaminants. Decontamination area precautions include the following:

- The SSO identifies and requires the appropriate protective equipment to be used.
- The Decontamination Group must decontaminate themselves and their equipment at the end of the incident.
- Any runoff or residue from decontamination procedures should be contained within the perimeter of the CRZ and retained for proper disposal.
- Contaminated run-off should not be allowed to spread or escape. Diking may be necessary and should be directed back to the EZ. Disinfectant solution should be collected for proper disposal, and not allowed to run over the ground to the EZ.

9.4.2.5.3 General Decontamination Practices

1. Locate a decontamination station at the hotline in the decontamination area of the Warm CRZ where personnel routinely enter or exit the EZ.

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2. When exiting the EZ, personnel will doff overboots (if used), chemical-resistant boots, coveralls, and outer gloves only at the specified decontamination station. Air purifying respirators are removed last.
 3. Instruct personnel in proper decontamination techniques. This includes removing protective clothing in an “inside out” manner.
 4. Arrange the decontamination area so as not to contaminate the ground under and surrounding the area. Using pools, pads, tarps, and other such coverings can aid in this effort.
 5. All doffed reusable PPE remains at the decontamination station for reuse. At the conclusion of work in the EZ, all disposable and reusable PPE are placed in separate plastic bags before disposal or transfer offsite.
 6. Personnel are not permitted to exit the CRZ until contaminated clothing and equipment have been removed and they have washed their hands and face with soap and water.
 7. No smoking, eating, drinking, chewing gum or tobacco, taking medication, or applying cosmetics is permitted within the EZ or CRZ.
 8. Partial decontamination that is always required when exiting the EZ includes an equipment drop (hard hats, tools, and samples) in the decontamination area of the Warm CRZ on plastic labeled “EQUIP” and a glove and boot wash and rinse at the hotline of the decontamination area.
 9. While standing in appropriate tubs, scrub gloves and boots as needed while spraying them with disinfectant solution and a clean water rinse.
 10. When disposable outer garments cover boots and gloves, wash and rinse procedures may not be necessary, as determined by the Operation Section Chief.
 11. Discard all disposable outer garments in appropriately labeled plastic bags before disposal or transfer.
 12. Removing contaminants from clothing or equipment by blowing, shaking, or any other means that may disperse material into the air is prohibited.
 13. At the conclusion of work in an EZ, place all PPE in plastic bags before disposal or transfer.
 14. Conduct equipment decontamination on a concrete pad or plastic sheeting constructed so decontamination fluids can be collected and drummed.
 15. Dispose of decontamination fluids properly, in accordance with procedures outlined in the approved site-specific biosecurity plan.

9.4.2.5.3.1 Respirator Decontamination

1. Clean respirators with soap and water after each day of use, and when personnel change work.
2. Make clean water available for such purposes.

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3. After washing, disinfect each respirator by wiping both the inside and outside with isopropyl alcohol.
 4. Store the cleaned respirators in clean plastic bags.

9.4.2.5.3.2 Reusable Equipment Decontamination

1. Items such as boots, goggles, and hard hats are considered reusable. Decontaminate these items by washing them with a detergent such as Alconox or disinfectant, then rinse thoroughly and either air dry or wipe them down with paper towels.
2. Reusable equipment used for sampling (for example, hand augers, stainless steel bowls and spoons) should be either steam cleaned or cleaned with a disinfecting agent.

9.4.2.5.3.3 Disposable Equipment Decontamination

1. Discard disposable coveralls, nitrile rubber gloves, disposable sampling materials, unusable safety equipment (for example, used respirator cartridges, punctured disposable boots), and other materials, such as bags and paper towels, in such a way that they cannot be reused.
2. Double-bag all disposable items in heavy plastic garbage bags and dispose of them as outlined in the approved site-specific biosecurity plan.
3. Dispose of coveralls and nitrile rubber gloves at least daily, and more frequently if they are torn or grossly contaminated.

9.4.2.5.3.4 Monitoring Effectiveness of Decontamination

Use visual examination and sampling to evaluate the effectiveness of decontamination procedures, in compliance with 29 CFR 1910.120(k)(2)(iv), as applicable.

Visual examination is used to ensure that procedures are implemented as described and that they appear to control the spread of contaminants under changing site conditions. Visual examination is also used to inspect for signs of residual contamination or for contaminant permeation of PPE.

Sampling, both air sampling and surface sampling, is used to verify the effectiveness of decontamination. Take air samples in the clean zone to ensure that airborne contaminants have not spread to clean areas of the site. Take surface samples from the inside surfaces of PPE, from decontaminated heavy equipment, and from surfaces within clean areas of the site to ensure that site decontamination and control procedures are performing as anticipated. The type and frequency of air and surface sampling to ensure effective decontamination are determined by the Incident Safety Officer (see the Health and Safety and PPE SOPs), based on the contaminant, the concentrations, and the sampling methods available. If site procedures change as a result of inspection and monitoring, notify all affected employees of these changes.

As an example, refer to the Commonwealth of Massachusetts Department of Fire Services Decontamination Standard Operating Guideline provided as Appendix 9.A Hazardous Materials Response in the Health and Safety Plan outlined in the Health and Safety and PPE SOPs.

9.4.2.6 Shipping/Transportation Biosecurity Practices

See the Disposal SOPs for shipping and transportation protocols.

9.4.2.7 Documentation and Reporting

This protocol describes the process for carrying out the initial epidemiological interview and the follow-up biosecurity evaluations of commercial premises and how to file the necessary reports. [Attachment 9.E](#) contains a sample questionnaire. The Biosecurity Group monitors each commercial premises in the CA by regularly auditing its biosecurity status. Each biosecurity activity is linked to a corresponding form or report. Standardized questionnaires were devised for consistency in the investigations and in the resulting reports.

9.4.3 Demobilization

To help ensure the safety and health of the responders, several activities should occur at the end of each day or when exiting a premises. The exit procedures are:

- Use soapy water, remove dirt, debris, and organic material from the vehicle and trailer tires, wheel wells, and undercarriage, or take the vehicle through a pressure car wash.
- Use a brush and approved disinfectant solution to clean and disinfect all equipment thoroughly—including personal items such as eyewear and jewelry. If these items are harmed by disinfectant, they may be washed thoroughly with soap and water or dipped in vinegar (acetic acid) if the FAD is an acid susceptible virus. See the C&D SOP.
- Follow guidance provided by the Vector Control Group Supervisor regarding pest control measures related to vehicle biosecurity.
- Place all disposable “dirty” items (for example, disposable coveralls, boots, and supplies) in a plastic garbage bag to be left on the premises with the owner for disposal. If this is impossible, place the plastic bag in the “dirty” area of the vehicle and dispose of it in a manner that prevents animal exposure to the items.
- Scrub the bottoms of soiled rubber boots with a brush to remove all dirt or debris. Clean and disinfect the boots with an approved disinfectant.
- Dispose of the disinfectant solution according to the label instructions.
- Before entering the “clean” area of the vehicle, remove soiled coveralls so that they are “inside out,” place them in plastic garbage bags, and put them in a “dirty” area of the vehicle along with other soiled reusable clothing.
- Shower and shampoo.
- Launder clothing.

9.5 Training

Further Biosecurity training tools, guidance and additional resources can be found on the following APHIS websites:

Biosecurity Tools:

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- Tools:
http://www.aphis.usda.gov/emergency_response/tools/aphis_role_emergency_tools.shtml.
 - Additional Resources:
http://www.aphis.usda.gov/emergency_response/tools/aphis_role_emergency_tools_resource_links.shtml.

Attachment 9.A Protocol for Foot Baths

Equipment and Supplies Needed

1. Plastic grass rugs
2. Holding tray
3. Rubber-backed carpets
4. Environmental Protection Agency-approved disinfectant
5. Water.

Procedures for Maintaining Foot Baths

1. Logistics personnel are responsible for maintaining foot baths.
2. Foot baths are located in the front of entrances to building doors.
3. Plastic rugs are placed inside fiberglass trays and covered with a 1 Stroke solution (½ ounce to a gallon of water) or disinfectant solution (1.3 ounces to a gallon of water).
4. Rubber-backed carpets (4' × 6') are placed in front and behind the trays. Trays have non-skid carpet under them to keep them from moving when used.
5. Foot baths are cleaned at least once a day and more often if they become dirty.

Attachment 9.B Sample Biosecurity Signs to Place at Site Entrances

The following are sample signs to post at the farm entrance in the event of an FAD outbreak. These examples are available from the Center for Food Security and Public Health, Iowa State University. They can be found at the following site:

<http://apps.cfsph.iastate.edu/Products/signs.htm>.

PROTECTIVE BOOTS & CLOTHING REQUIRED UPON ENTRY

HONK BEFORE EXITING VEHICLE TO ANNOUNCE ARRIVAL

CHECK-IN WITH FARM PERSONNEL UPON ARRIVAL

PLEASE, DO NOT ENTER WITHOUT PERMISSION

NOTICE AUTHORIZED PERSONNEL ONLY BEYOND THIS POINT

FARM VISITOR POLICIES

- Only enter this farm with permission
- Park at the entrance or in designated parking areas
- Check-in with farm personnel upon arrival and sign the visitor log
- Follow instructions provided by farm personnel at all times
- Leave deliveries in areas designated by farm personnel
- All visitors must be accompanied by farm personnel at all times
- Do not handle or contact animals unless permission is granted by farm personnel

Policies for Visitors Contacting Animals or Entering Animal Areas

- Clean coveralls, hats, and disposable or disinfected rubber boots will be provided by the farm and must be worn while in animal areas
- Boots must be clean before entering animal areas
- Wash hands with soap and warm water before AND after handling animals
- Boots must be washed and disinfected or removed and disposed of properly after exiting animal areas
 - Clean all dirt, manure, and debris off of boots BEFORE stepping into the disinfectant solution
 - Allow the disinfectant solution to have ample contact time with the boot surface
- When leaving, remove all protective outer clothing and footwear provided by the farm and leave it in the designated area
- For your own protection, wash your hands with soap and warm water before leaving the farm



Attachment 9.C Protocol for On-Site Commercial Biosecurity Visits

The following are the procedures requiring special consideration at commercial facilities.

Before Visiting a Commercial Premises

- Be certain your vehicle has been cleaned and disinfected including the undercarriage. A commercial carwash is adequate.
- Establish a time and date for the visit with the owner or manager.
- Call the company veterinarian informing him or her of the visit.
- Review the biosecurity protocols and complete a biosecurity questionnaire with owner.
- Each biosecurity reviewer will visit only one commercial ranch per day.

Biosecurity upon Arrival to a Commercial Premise

- Park up-wind in a designated “clean” area outside the entrance to the premises.
- Close vehicle windows.
- If possible, park in a firm, dry area, avoiding mud and organic material (that is, grass).
- Before leaving the vehicle, pull on two pairs of boots over your shoes (yellow boots for larger shoe sizes). Put on the last pair of boots as you swing your legs out of the vehicle with your feet not touching the inside of the vehicle.
- Put on the lower part of coverall suit before getting out of your vehicle. Put on a bonnet, two pairs of gloves, and a dust mask. Get out of the vehicle.
- Cover your hair with a bonnet.
- Fully zip your suit.
- Tuck your pant legs inside of your outer boots.
- Ensure your last pair of gloves covers the sleeves (cuff) of the coverall suit (use duct tape if necessary).
- Unlock your trunk.

Returning to the Vehicle

- Remove the sprayer from the back of the vehicle (dirty area) and thoroughly spray tires and wheel wells; mud or any organic material needs to be removed or thoroughly saturated.
- Before replacing sprayer, thoroughly disinfect all surfaces with disinfectant or Lysol. DO NOT place the sprayer on the ground.
- Remove garbage bags (of 1.1 mm thickness or more) from the back of the vehicle.

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- Remove mask, bonnet, outer pair of boots, and outer pair of gloves.
 - Remove coverall suit by “rolling down” and “stepping out” and placing in a trash bag.
 - Triple bag and spray with disinfectant.
 - Place in sealed container in “dirty” area of vehicle.
 - Sit in the car without your hands or feet touching the inside of the vehicle.
 - Remove both pairs of boots by inverting them. Compress into a tight “ball”.
 - Disinfect each shoe with Lysol before placing them inside the vehicle (taking care not to touch the door sill).
 - Remove the last pair of gloves by inverting them over the “balled boots”. Spray ball with disinfectant.
 - Place “ball” into a zip lock bag and put the zip lock bag into a small garbage bag and seal with duct tape.
 - Thoroughly wash hands with waterless antibacterial gel.
 - Dispose of both bags (the one containing the coverall suit and the other containing the boots and gloves) into the designated dumpster at the ICP.

End of the Day

- Wash your car at a car wash with an undercarriage washing system.
- Keep the interior of the vehicle clean and free from dirt and debris by properly disposing of items.
- If the visit has been conducted under windy conditions or if there is the possibility of contamination to the inside of the vehicle with organic material from the ranch, clean and disinfect the interior of the vehicle completely using a vacuum followed by wetting and drying of all exposed surfaces.
- If conditions are normal and there is no evidence of contamination, then only the interior floor mats must be vacuumed and sprayed with disinfectant as a precaution before vehicle is re-used.
- If available, use plastic floor mats.
- Refilling Sprayers with Disinfectant
- Filling is done in the designated area at the ICP.
- Wear gloves and boots when refilling.
- Spray vehicle wheels and wheel wells upon leaving.
- Disinfectant has an “effective life” of seven days. Judge the efficacy of disinfectant solution by its color. A faint or colorless mixture is no longer effective.

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- “Expired” disinfectant should be disposed of in the designated area at the ICP (DO NOT dump disinfectant into municipal drainage systems).

Attachment 9.D Protocol for Commercial Mortality Surveillance Biosecurity

All personnel participating in the disease mortality surveillance must be instructed in the following protocol:

Upon reaching the premises the vehicle is parked in a location off the road near where the containers are placed at each designated premises location.

Both team members suit up entirely and follow the procedures below:

1. Before leaving the vehicle place two pairs of coverall boots over shoes. Get out of vehicle.
2. Put on coverall suit, gloves, dust mask, and hair bonnet. Be sure that skin on arms is not exposed by pulling second pair of gloves over sleeves of coverall suit.
3. One team member remains clean and handles all clean equipment and forms. Hand equipment from the vehicle as needed to the dirty team member. (The team member entering the premises is considered potentially exposed or contaminated and is referred to in this document as the “dirty team member.”) The dirty team member remains dirty for the entire day. There is no switching back and forth of clean and dirty duties during a day.
4. The dirty team member retrieves the sample bags containing the animals to be sampled from the container at each site.
5. After the sample bags are retrieved, the dirty team member returns to the vehicle, where the clean team member provides a second trash bag into which each sample bag is placed for transport. The dirty team member sprays the outside of each bag with disinfectant before it is placed inside of the other one.
6. The double bagged sample is placed into a third bag, which is the shipping bag. A yellow tag with a premises label on it is placed on the outside bag. Write the date sampled and house ID on the label.
7. The shipping bag is closed and sprayed or sponged off with disinfectant and placed in the back of the vehicle in a cooler with ice packs or ice.
8. The dirty person sprays the inside and outside of the trash cans with disinfectant, then turns the cans upside down to signal to the owner that the collection has been completed. The lids are also sprayed on both sides and placed by the cans.
9. The vehicle wheels and wells are sprayed with disinfectant.
10. Each team member removes their bonnet, coverall suit and outer elastic banded boots in exactly that order, and places them in a trash bag. The bag is placed in a second trash bag. The second bag is wiped down or sprayed with disinfectant and placed in a third bag. Leave inner plastic boots and gloves on.

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11. The dirty person sprays the sprayer with disinfectant, and then places the sprayer in the back of the vehicle.
 12. Sit in the seat of the vehicle with feet outside; remove the gloves and the plastic boots by rolling inside out. Place gloves inside boots, ball up the boots and gloves, and place both balls into a trash bag.
 13. Both team members spray their shoes with disinfectant and wash hands with waterless cleaner before placing feet inside the vehicle.
 14. Return to the designated area for dropping off sample bags. Put on one pair of booties and gloves before bringing the samples inside. Place the samples in the Mortality Surveillance cooler. Leave completed lab submission forms in the pocket on the exterior of the cooler. Return to vehicle, remove boots and gloves, place them in a trash bag, spray bag with disinfectant, spray shoes with disinfectant, and wash hands with waterless cleaner. Discard all trash in designated dumpster.
 15. Wash vehicle at car wash that has an undercarriage spray system.

Attachment 9.E Abbreviations

APHIS	Animal and Plant Health Inspection Service
C&D	Cleaning and Disinfection
CA	Control Area
CP	Contact Premises
CRZ	Contamination Reduction Zone
CSF	Classical Swine Fever
EZ	Exclusion Zone
FAD	foreign animal disease
FAD PReP	Foreign Animal Disease Preparedness and Response Plan
FMD	foot-and-mouth disease
IC	Incident Command
ICP	Incident Command Post
IP	Infected Premises
ICS	Incident Command System
NPIC	National Preparedness and Incident Coordination
PPE	personal protective equipment
SOP	standard operating procedures
SSO	Site Safety Officer
SZ	Support Zone
USDA	United States Department of Agriculture
VS	Veterinary Services